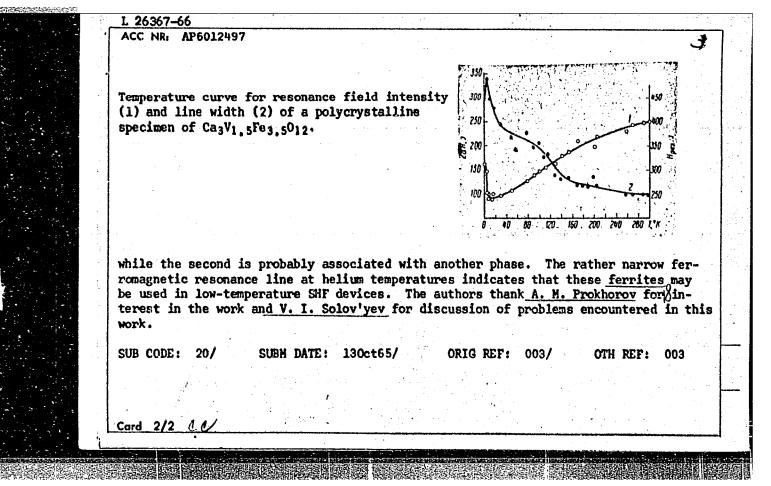
L 26367-66 ENI(1)/EWI(m)/ENA(G)/ENF(E) SOURCE CODE: UR/0181/65/008/004/1265/1267 ACC NR. AP6012497 AUTHOR: Agranovskaya, A. I.; Karlov, N. V.; Krynetskiy, B. B. C3 ORG: Physics Institute im. P. N. Lebedev AN SSSR, Moscow (Fizicheskiy institut AN SSSR) TITLE: Effect of temperature on line width and resonance field of ferromagnetic resonance in polycrystalline specimens of Ca<sub>3</sub>V<sub>1.5</sub>Fe<sub>3.5</sub>O<sub>12</sub> SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1265-1267 TOPIC TAGS: ferromagnetic resonance, low temperature effect, SHF, ferrite, line width, magnetic anisotropy ABSTRACT: The ferromagnetic properties of Ca<sub>3</sub>V<sub>1.5</sub>Fe<sub>3.5</sub>O<sub>12</sub> are studied in an attempt to determine the possibilities for using this material in SHF ferrite devices which operate at low temperatures. Line width and resonance field were measured as functions of temperature in polycrystalline specimens of this ferrite. Powder metallurgy methods were used for making the specimens. The results show an increase in line width and reduction in field intensity at low temperatures (see figure). These phenomena may be due to an increase in the magnetic anisotropy of the crystal. The tenperature curve for the line width shows two maxima: the first at 40K and the second at 7-100°K. The first is apparently due to rapid relaxation of bivalent iron ions Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100520018-4"



ACC NR: AP7006228

(A)

SOURCE CODE: UR/0078/67/012/001/0038/0043

AUTHOR: Vinnik, M. A.; Agranovskaya, A. I.; Somenova, N. N.

ORG: none

TITLE: X-ray diffraction and microstructural study of the phase relationships in the formation of barium cobalt hexaferrite BaCo<sub>2</sub>Fe<sub>16</sub>O<sub>27</sub>

SOURCE: Zhurnal neorganicheskoy khimii, v. 12, no. 1, 1967, 38-43

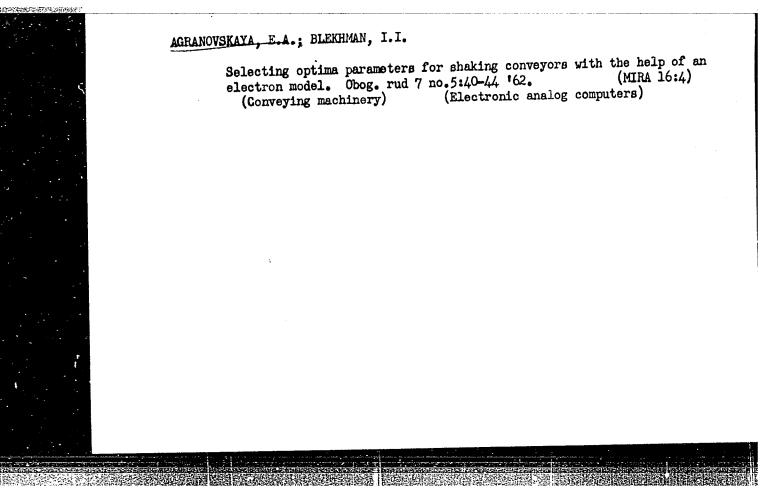
TOPIC TAGS: barium compound, cobalt compound, ferrito

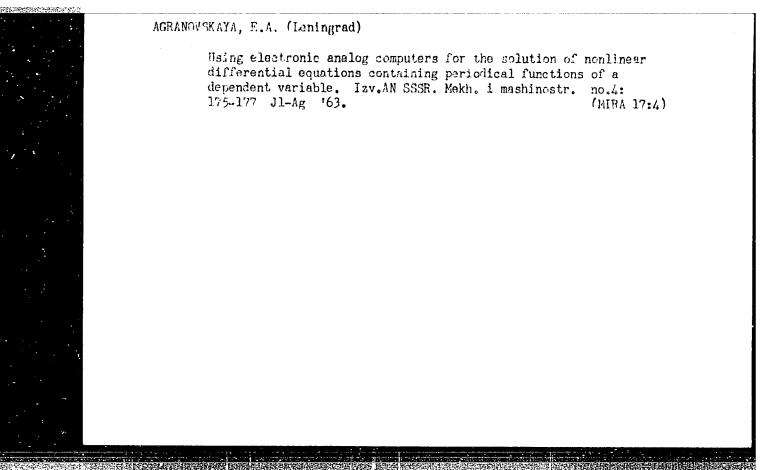
ABSTRACT: The compound BaCo<sub>2</sub>Fe<sub>1</sub>6O<sub>2</sub>7, designated Co<sub>2</sub>W, was synthesized by a solid phase reaction from Fe<sub>2</sub>O<sub>3</sub>, Co<sub>3</sub>O<sub>4</sub> and BaCo<sub>3</sub>, and the phase composition of the products (kept at 500-1440°C for 4-20 hr, then quenched in air or furnace-cooled) was determined by x-ray diffraction and microstructural methods. Co<sub>2</sub>W does not form directly from the initial oxides, but via the intermediates BaFo<sub>12</sub>O<sub>19</sub> (barium hexaferrito) and cobalt ferrite CoFe<sub>2</sub>O<sub>4</sub>. The compound Co<sub>2</sub>W bogins to form at 1150°C and is stable at temperatures below 1350°C. At 1350°C and above, Co<sub>2</sub>W decomposes, the products being BaFe<sub>12</sub>O<sub>19</sub> and Co<sub>5</sub>Fe<sub>1</sub>Fe<sub>2</sub>3+O<sub>4</sub>. The decomposition is due to the reduction of Fe<sub>3</sub>+ to Fe<sup>2</sup>+ at high temperatures. Orig. art. has: 7 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 26Feb65/ ORIG REF: 004/ OTH REF: 001

Card 1/1

UDC: 546.732'723'431--31:539.26





5/179/63/000/001/029/031 E191/E135

Agranovskaya, E.A. (Leningrad) AUTHOR:

Investigations into the mechanism of a vibrator with automatic unbalance control

Otdeleniye

PERIODICAL: Akademiya nauk SSSR. Izvestiya. tekhnicheskikh nauk. Mekhanika i mashinostroyeniye,

no.1, 1963, 190-193

Reference is made to the German description of an inertia vibrator in which the unbalance forces are automatically reduced during running up and traversing of resonant conditions. The device consists of a disk on which the unbalance mass slides radially along guides. When stationary and in slow rotation, the mass is pressed by a spring towards the center so that the eccentricity and the unbalance force are small. Under working conditions, the mass is thrown outwards and develops the required unbalance force. The following conditions have to be met: 1) The rotational speed at which the unbalance mass overcomes the spring force should be about twice the maximum natural frequency of the vibrating machine. 2) The maximum value of the restoring Card 1/2

Investigations into the mechanism... 5/179/63/000/001/029/031 E191/E135

force arising as a result of the mass being thrown against the peripheral stop must be limited. 3) The device should be small and reliable in operation. Fulfilment of the second condition requires the solution of the differential equation of motion of the unbalance mass, which is of the second order and has variable coefficients. An electronic analog computer was used to obtain solutions for many special cases. The differential equation is formulated. The block diagram of the analog computer is illustrated and the method by which the mechanical quantities are transformed into computer inputs is given. For different values 4, 6, 8, and 10 of the ratio of the initial and working eccentricities of the vibrator, graphs are reproduced, derived by the computer, in which the velocity of the moving unbalance mass at the instant of impact against the stop is plotted against the rotational speed as a multiple of the natural frequency of the unbalance mass on its spring. Each graph contains a family of curves corresponding to constant values of the vibrator shaft acceleration. Evaluation of the main design parameters of the device, with the help of graphs provided, is described in detail. There are 7 figures. SUBMITTED: July 19, 1962 Card 2/2

AGRANOVSKAYA, E.A. (Leningrad)

Investigating the process of the passage through resonance in units with inertia exciters. Izv. AN SSSR.Mekh. no.4:101-107 J1-Ag 165. (MIRA 18:12)

AGRANOVSKAYA, LA.: ASATKINA, Ye.F.; BOYTSOVA, Ye.P.; BOCHARNIKOVA, A.D.:
BOYTSEL', Z.A.;: IVANOVA, Ye.A.; KALASHNIKOVA, V.A.; KLIMKO, S.A.:
KRUCHININA, N.V.; MALYASOVA, Ye.S.; MARKOVA, I.G.; MARTYNOVA, Z.I.;
POKROVSKAYA, I.M.; POLUKHINA, V.A.; ROMANOVSKAYA, G.M.; SAMIGULINA,
Ye.P.; SEDOVA, M.A.; SIGOVA, N.N.; STEL'MAK, N.K.; PERLIN, S.S., redaktor izdatel'stva; GUROVA, O.A., tekhnicheskiy redaktor.

[Atlas of Oligocene spore and pollen complexes in various regions of the U.S.S.R] Atlas oligotsenovykh sporovo-pyl'tsevykh kompleksov raslichnykh raionov SSSH. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gologii i okhrane nedr. 1956. 312 p. (Leningrad, Vsesoiuznyi geologicheskii institut. Materialy, no.16) (MLRA 10:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut
Ministerstva geologii i okhrany nedr SSSK.(for Asatkina, Boytsova,
Kalashnikova, Kruchinina, Pokrovskaya, Romanovskaya, Sedova, Stel'mak). 2. Yuzhno-Ural'skoye geologicheskoye upravleniye (for Sigova)
3. Ural'skoye goelogicheskoye upravleniye (for Agranovskaya, Bocharnikova, Martynova, Polukhina, Samigulina). 4. Trest "Zapsibneftegeologiya"
(for Boytsel', Ivanova, Klimko, Markova). 5.Geograficheskiy fakul'tet
Leningradskogo gosudarstvennogo universiteta(for Malyasova)
(Pollen, Fossil) (Spores (Botany), Fossil)

AGRANOVSKAYA, I.A.; ALYUSHINSKIY, Yu.A.; ASATKINA, Ye.F.; BOYTSOVA, Ye.P.;

BOCHANNIKOVA, A.D.; VOYEVODOVA, Ye.; GROMOVA, H.S.; ZAUYER, V.V.;

MARTYHOVA, Z.I.; PAHOVA, L.A.; POKROVSKAYA, I.M.; ROMAHOVSKAYA, G.M.;

SEDOVA, M.A.; STEL'MAK, N.K.; KHAYKINA, S.L.; EDEL'SHTEYH, L.I.

[deceased]; MAKRUSHIN, V.A.; tekhn.red.

[Atlas of upper Cretaceous, Paleocene and Eocene spore and pollen complexes in certain regions of the U.S.S.R.] Atlas verkhnemelovykh, paleotsenovykh i eotsenobykh sporovo-pyl'tsevykh kompleksov nekotorykh raionov SSSR. Leningrad. 1960, 574 p. (Leningrad. Vsesoiuznyi geologicheskii institut. Trudy, vol.30). (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut
Ministerstva geologii i okhrany nedr SSSR (for Alyushinskiy, Asatkina,
Boytsova, Gromova, Panova, Pokrovskaya, Romanovskaya, Sedova, Stel'mak,
Bil'shteyn). 2. Ural'skoye geologicheskoye upravleniye Ministerstva
geologii i okhrany nedr SSSR (for Agranovskaya, Bocharnikova, Martynova). 3. Severo-Vostochnoye geologicheskoye upravleniye Ministerstva
geologii i okhrany nedr SSSR (for Voyevodova, Khaykina). 4. Leningradskiy filial Gidroproyekta Ministerstva elektrostantsiy (for Zauyer).

(Palynology)

MUSTAFIN, I.S.; FRUMINA, N.S.; AGRANOVSKAYA, L.A.

Determination of gold in tungsten-based platings by means of variamine blue. Zhur. anal. khim. 18 no.9:1054-1058 S '63. (MIRA 16:11)

1. N.G. Chernyshevsky Saratov State University.

L 15988-66 EWT(m)/EWP(t) IJP(c) JD/JG/GS

ACC NR: AT6005602

SOURCE CODE: UR/0000/64/000/000/0193/0195

AUTHOR: Frumina, N. S.; Mustafin, I. S.; Agranovskaya, L. A.; Karakhtanova, Z. G.

ORG: Saratov State University (Saratovskiy gosudarstvennyy universitet)

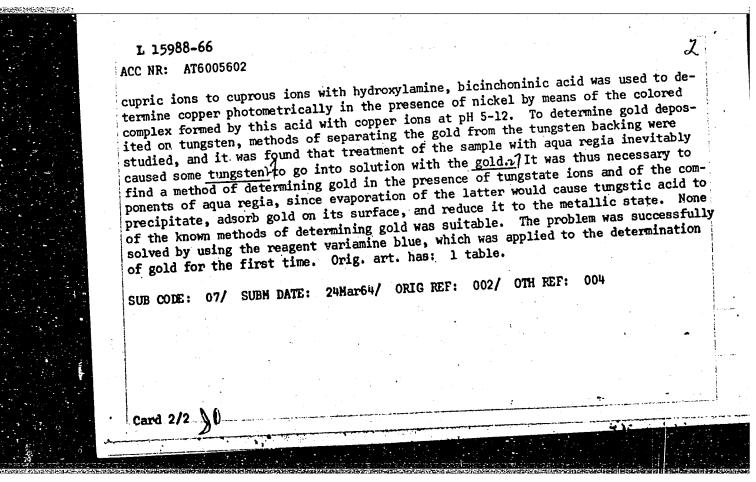
TITLE: Determination of noble and certain other metals in protective and antithermoemissive coatings  $\frac{B+I}{2}$ 

SOURCE: Vsesoyuznaya konferentsiya rabotnikov metallurgicheskoy i khimicheskoy promyshlennosti i sotrudnikov vuzov. Rostov-on-Don, 1962. Peredovyye metody khimicheskoy tekhnologii i kontrolya proizvodstva (Progressive methods of chemical engineering and production control); trudy konferentsii. Rostov-on-Don, Izd-vo Rostov-skogo univ., 1964, 193-196

TOPIC TAGS: gold, tungsten, copper alloy, nickel alloy, aluminum alloy, tin alloy, protective coating, quantitative analysis

ABSTRACT: Analytical methods were developed for determining the quality and thickness of protective coatings made of copper-nickel, copper-aluminum, tin-nickel, tin-copper, and gold and used on tungsten and molybdenum articles. After reduction of

Card 1/2



# AGRANOVSKAYA, N.

The law comes into force. Izobr. i rats. no.11:22-24 N 61. (MIRA 14:11)

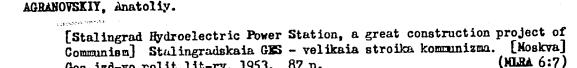
(Moscow-Cables)

(Technological innovations)

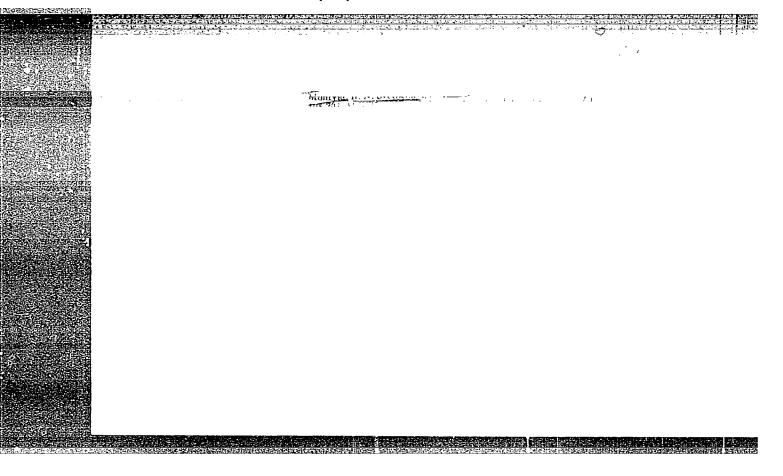
AGRANOVSKIY, A.

Agranovskiy, A. "The university of Karavayevo," (The dairy-breeding state farm of Karavayevo, Kostroma Oblast. Outline), In the collection: Kostroma (Kostroma), 1948, p. 136-57.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 17, 1949).



Gos.izd-vo polit.lit-ry, 1953. 87 p. (MLS)
(Stalingrad Hydroelectric Power Station)



SOV/137-58-8-16626

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 53 (USSR)

AUTHORS: Agranovskiy, A.A., Montvid, A.E.

TITLE: New Engineering Solutions in the Design of Alumina Plants

(Novyye tekhnicheskiye resheniya pri proyektirovanii glinozem-

nykh zavodov)

PERIODICAL: Sb. materialov tekhn. inform. Gos. in-t po proyektir.

alyumin., magniyevykh i elektrodn. z-dov, 1957, Nr 1,

pp 13-20

ABSTRACT: A presentation is made of the major trends in the develop-

ment of alumina production: The utilization of complex types of raw material, increases in the capacities of alumina department, modernization of equipment design and - in particular - sintering processes, reductions in the consumption of raw materials and energy, increase in productivity, and improvement in working conditions. Examination is made of the planning solutions of various conversions occurring in the production process: Acceptance of ore and conditioning it to uniform

properties, receipt and storage of materials in powdered form

Card 1/2 for metering into and grinding with the raw material, sintering

SOV/137-58-8-16626

New Engineering Solutions in the Design of Alumina Plants

of the charge in rotary ovens, leaching of the sinter and separation of the slime from the solution, thickening and filtration of the slimes and the Al(OH)<sub>3</sub>, and decomposition of aluminate solutions by evaporating return solutions. Ideas are put forth on the introduction of sintering processes for nepheline and bauxite mixtures, and for fluidized-solid calcination and cooling of alumina. Problems of mechanization of minor processes in alumina production are examined.

V. Shch.

1. Aluminum--Production 2. Industrial plants--Design

Card 2/2

SOV/137-58-10-20696

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 51 (USSR)

AUTHORS: Agranovskiy, A.A., Labutin, G.V.

TITLE: Complex Processing of Alunite Ore (Kompleksnaya perera-

botka alunitovoy rudy)

PERIODICAL: V sb.: Legkiye metally. Nr 4. Leningrad, 1957, pp 51-55

ABSTRACT: The complex processing of the ore envisages utilization of

all its useful components: Al<sub>2</sub>O<sub>3</sub>, SO<sub>3</sub>, Na<sub>2</sub>O, and K<sub>2</sub>O. The caustic, ammonia-caustic, and reduction methods of processing the ore are examined. The last yields the best technical and economic indices. The method is based on removing the SO<sub>3</sub> in the Al sulfate by reducing roast with a gaseous or vapor-

izing liquid reductant. The roast gases contain up to 70% SO<sub>2</sub>.

The roasting is performed in fluidized-solids furnaces. Reduction in accordance with the countercurrent principle provides

95% decomposition of the Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>. The reduced ore is leached at 100°C by circulating caustic solution containing 120

g Na<sub>2</sub>O/liter. The aluminate solution is freed of silicon at

Card 1/2 1050 and is centrifuged. As the solution is evaporated after

SOV/137-58-10-20696

# Complex Processing of Alunite Ore

separation of the Al hydroxide, Na and K sulfates are liberated. Sintering of a portion of the resultant sulfates with the return hydroxide and leaching of the Na aluminate derived compensate for the loss of caustic in the process. The reducing method, with a sintering arm, makes it possible to obtain  $Al_2O_3$ ,  $H_2SO_4$ , and  $K_2SO_4$ .

L.P.

1. Aluminum-potassium-sulfate--Processing 2. Minerals--Separation 3. Centrifuges --Applications 4. Sulfates--Sintering

Card 2/2

USSR/Zooparasitology - Parasitic Worms.

G

Abs Jour

: Ref Zhur Biol., No 1, 1959, 950

Author

Agranovskiy, A.M.

Inst

: Leningrad Sanitation and Hygiene Medical Institute

Tit).e

: Sanitary-Helminthologic Analysis of Fish as the Means of

Prophylaxis of Diphyllobothriasis

Orig Pub

: Tr. Leningr. san.-gigiyen. med. in-ta, 1958, 44, 283-

306

Abstract

: For the purpose of lowering the morbidity rate of diphyllobothriasis a system is presented by means of sanitaryhelminthologic analyses of fish (F) and includes in the determination a series of such examinations and an attainment of F affected by larvae of the tapeworm (T). The system includes: organization of the study of F for infection by T, establishment of the intensity of infection

Card 1/3

- 12 -

USSR/Zooparasitology - Parasitic Worms.

Abs Jour : Ref Zhur Biol., No 1, 1959, 950

of F in individual water basins (water basin regions), establishment of a permissible norm for the number of T, and the order of uses of F in relation to the data of the investigation. Studies of strains of F of primary intermediate hosts of the tapeworm are extensively conducted once every 10 years by activities of the sauitary-epidemiological plants. Sampling of F in lakes and inlets was arranged every 125 - 150 km and in rivers every 100 - 125 km. Small water basins were explored in one unit. 75 specimens (25 of the large species and 50 small) were examined, and complete helminthologic explorations were performed with conversion of the number of T in 1 kg of product. In determining the degree of contamination of F by T, the former were divided into two groups: F used for food purposes on general grounds, and F conditionally suitable and usable after special treatment and decontamination. To the second group

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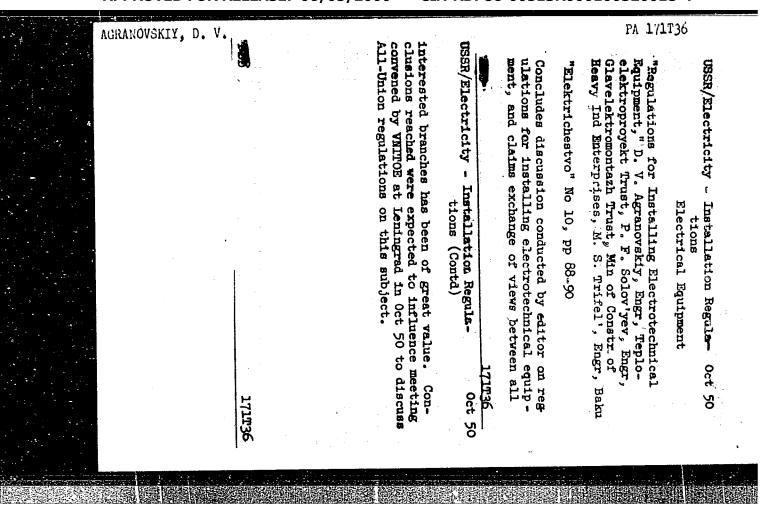
USSR/Zooparasitology - Parasitic Worms.

APPROVED FOR RELEASE: R06/05/2000, No CIA-RDP86-00513R000100520018-4"

belonged F, having on an average of 1 kg weight 10 T and more in fuff, 8 in perch, 4 in elipout, and 3 in pike. The invasion hazard of this group is insignificant, but it is necessary to treat them through the preparation of canned foods, pickling, etc. For the small species of F (perch, ruff), heat treatment by frying for 15 - 20 minutes is sufficient. -- L.P. Shuvalova

G

G



SOV/137-59-2-4412

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 297 (USSR)

AUTHOR: Agranovskiy, G. A.

TITLE: Selection of Protective Atmospheres and Selection of Standard Indus-

trial Apparatus for Their Preparation (Podbor zashchitnykh atmosfer i vybor tipovykh promyshlennykh ustanovok dlya ikh prigotovleniya)

PERIODICAL: V sb.: Materialy Soveshchaniya glavn, metallurgov z-dov i in-tov

avtomob. prom-sti. Nr 3. Moscow, 1958, pp 127-133

ABSTRACT: An intermittent-action apparatus for the control of the moisture content of the atmosphere (A) was constructed and its automation is

being developed in the thermal division of the NIITavtoprom (Scientific Research Institute of the Motor Vehicles Industry). The calculation of the mechanics and economics of 14 projects for creating a controlled A leads to two projects which produce gas at the lowest cost per m<sup>3</sup>.

1) Endothermic A, and 2) Exothermic A without the removal of GO<sub>2</sub>

and H<sub>2</sub>O. A catalyst for the endothermic A was selected. Exothermic A without the removal of CO<sub>2</sub> and H<sub>2</sub>O are suitable only for the protection.

tion of low-carbon steel, whereas purified exothermic A are suitable

Card 1/2 for high-carbon steel, also. However, they are less efficient than

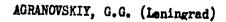
Selection of Protective Atmospheres and Selection of Standard Industrial (cont.) endothermic A. Industrial endothermic A generators have been put into operation in the Moscow im. Likhachev automobile plant.

A. S.

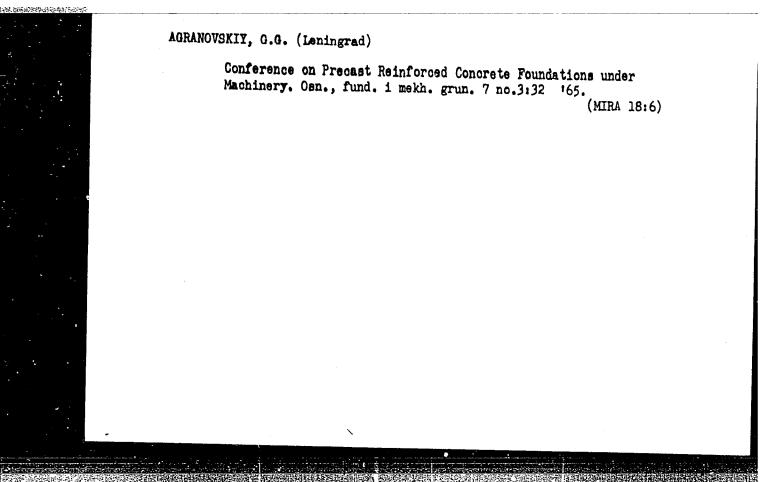
Card 2/2

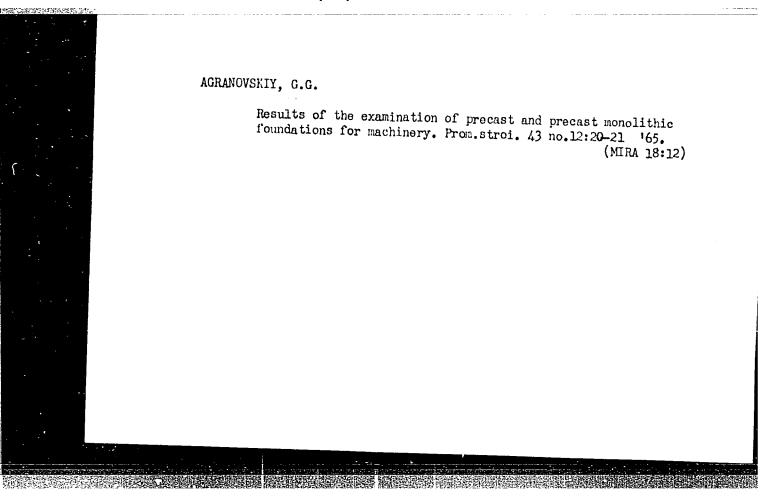
Engineers G. A. Agranovskiy, N. M. Levitanskaya, A. G. Kalinin (NIIAvtoprom), G. Ye. Litvin, A. A. Bulatnikov (Automobile Works imeni Likhachev) were awarded the First N. A. Minkevich Prize for the paper "Investigation and Introduction of a Standard, Controlled Atmosphere for Heat Treatment and Chemical-Heat Treatment of Steel", wherein these authors propose an original method of purification of town gas by passing it through zinc-chromium catalysts.

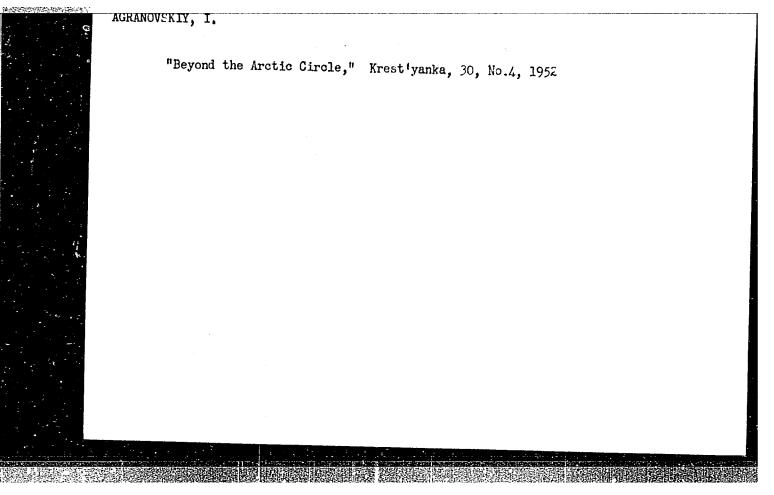
Results of the 1958 Competition for Obtaining imeni D. K. Chernov and imeni N. A. Minkevich Prizes, Metallovedeniye i termicheskaya ebrabotka metallov, 1959, No. 6, pp 62-64

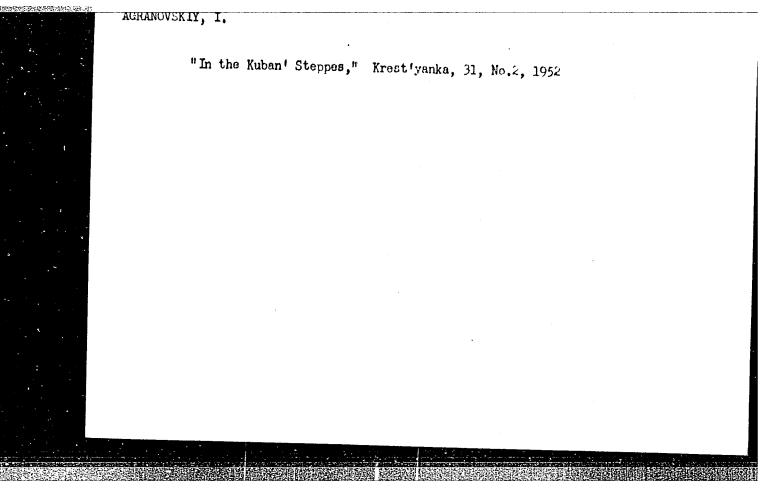


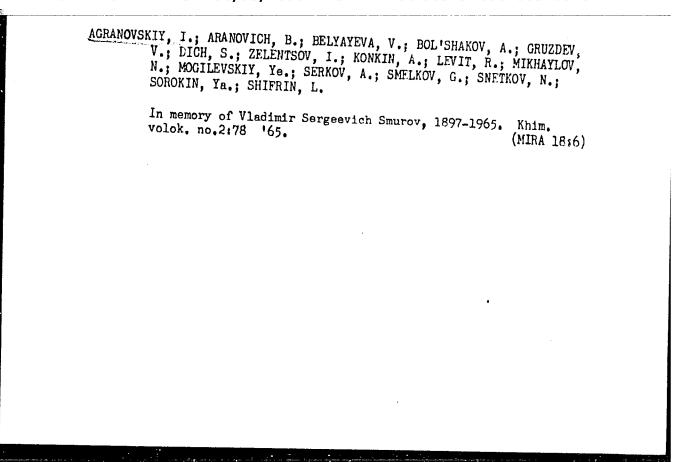
Precast foundations under machinery with dynamic leads. Osn., fund. 1 mekh.grun. 6 no.6:22-23 '64. (MIRA 18:1)











# AGRANOVSKIY, I.N. Operation of a pilot electric furnace for the production of hydrogen sulfide. Khim.volok. no.1:40-45 '59. (MIRA 12:8) 1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna. (Electric furnaces) (Hydrogen sulfide)

# AGRANOVSKIY, I.N.; TITOVA, T.F.

Electric condictivity of the carbon containing materials used in the production of carbon disulfide. Khim. volok. no.3:40-44 '65.

(MIRA 18:7

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel skogo institut iskusstvennogo volokna.



L 65293-65 EWT(1) MW(EH)

ACCESSION NR: AP5020416

UR/0375/65/000/008/0076/0079

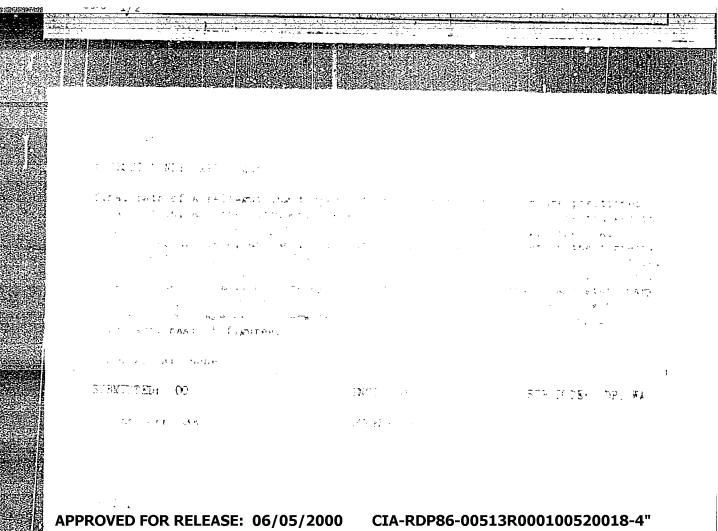
ACTHERS: Zabnev, A. F. (Phgineer, Commander): Agranceatty, K. Yu. (Doctor of 2)

water 27

SOURCE: Morakoy abornik, no. 8, 1965, 76-79

TOPIC TAGS: underwater photography, tracking system, underwater ballistics, underwater acoustics, underwater camera, underwater sound equipment, torpedo

ABSTRACT: low precision and the high cost of magnetic systems for underwater projectile tracking led to the development of accustic systems based on signal travel time. The particular type of equipment used and the arrangement of the



\$/165/60/000/004/006/012 A104/A129

Attraction

Agranovskiy, L.Ye., Radzhabov, M.M.

TITLE

Prospecting by the correlation method of refracted waves on the

southern slope of the Kara-Kum Flateau

FERIODICAL: Akademiya nauk Turkmenskoy SSR. Izvestiya, Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, no. 4, 1960, 46-52

The advantages of the correlation method of refracted waves (KMPV) for the prospecting of the Karal-Kum Platsau are discussed. The latter gained special interest after rich gas wells were struck in the albite deposits of the central region near Darvaza, Shiikh, Sermyy Zawod. The southern slope of the Kara-Kum is covered with a wide stratum of flow to medium-grained micaseous sand, interspersed by clay layers. Ground waters of an in depths of 5  $\sim$  50 m. KMFV registered a number of refracted waves porresponding to different strain bedded within Tertiary deposits in partonacecus Creca ecus rocks and telew these. Boundary velocities of the most intensive waves are shown in Tarle 1. A compar son of stratum velocities to boundary velocities shows that the latter exceed the former by 1.4 - 1.6. This sharp differentiation renders the KMFV method :

Card 1/4

Prospecting by the correlation method ...

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eminently suitable for investigations of structional and regional problems in this area. KMPV investigations comprised longitudinal and transverse profitting and were carried out by 26-channel (C  $\sim 25.51$ -  $\mu_{\rm h}$  (88-25.51-D) stations maximum frequency response of modified amplifters was reached at 25 g/s. Bolitary CD 48 (SF\_48) seismographs with a natural frequency of 26-27 c/s acted as receivers of electric oscillations. The distance termeen profiles varied from 5 to 1.5-2 km. The net of profiles formed close polygons at a maximum perimeter of 40 km. Experimental data proved that the waves corresponding to bagic refraction sounds. ries are distinguished by recording stability, unbroken phase correlation and extensive tracing ranges. The seismic profiles based on hodographs were compiled according to to and time fields laid down by G.D. Camburtsey (Ref. 1: "Korrelatate onnyy metod prelomlennykh voln" [Correlation method of refracted waves]. Akademizdat. 1952). The method was applied to 1-1.5 m deep refracting boundaries; deeper boundaries were shown with the help of time fields and ray diagrams with due consideration to the vertical mean velocity gradient. The relative error AH/H at the determination of the depth of boundary lines due to inaccurate determination of boundary velocity Vr is calculated according to.

Card 2/4

8/165/60/000/004/006/012 A104/A129

Prospecting by the correlation method ...

$$\Delta H/H = \frac{V \Gamma - n^{2}}{\sqrt{1 - \left(\frac{n}{1 + \frac{\Delta V_{r}}{V_{r}}}\right)^{2}}} - 1,$$

n=V/V<sub>r</sub>, \( \sum\_{V\_r} \times\_{V\_r} \) V<sub>eff</sub> (\( \sum\_{V\_r} \) V<sub>r</sub> = absolute error in the determination of velocity \( \varphi\_r \). The Izgant Fold revealed refracted strata bedded in Tertiary and upper-Cretaceous deposits; it forms a sub-latitudinal brachyanticline. The structure of Kazy has been prepared for deep drilling. The structural layout was traced along the refracting stratum with Vr = 5,500 - 5,700 m/sec and bedded in Cretaceous deposits. Two further not defined structural complexes were revealed northwest of Kazy; their presence appears to confirm the theory of Yu.N. Godin (Ref. C): "Glubinnoye geologicheskoye stroyeniye Turkmenii i yego izucheniye geofizioneskimi metodami" [Plutonic geological formations of Turkmenia and the exploration by geophysical methods], 1959) on the existence of a Tuarkyr - Karatakshinskiy Bank. Described explorations provide the basis for further prospecting of sloping structures by the KMPV method in the region of Southern Kara-Kum. There are 5 figures, 1 table and 5 Soviet-bloc references.

Card 3/4

		S/165/60/000/004/006/012 A104/A129
	ASSOCIATION: Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkmen-skoy SSR (Administration of Geology and Protection of Mineral Resources in the Council of Ministers of the Turkmenskaya SSR)  SUBMITTED: March 1, 1960	
50	Район работ усине волны $V_r$ (м/сек.)  Изгант $t_2$ 3200—3400 $t_3$ 6) $V_r$ (м/сек.) $t_4$ 4500—4600 $t_3$ 6400—6500  Казы $t_1$ 2600—2700 $t_4$ 3200—3300 $t_4$ 5500—5700	
	Card 4/4	ra de la companya de

86205

9,9865

S/049/60/000/006/005/005/XX E191/E381

AUTHORS:

Radzhabov, M.M. and Agranovskiy, L.Ye.

TITLE:

Determination of the Depth and Profile of the Separation Boundary from the Individual Transverse

Hodographs of Refracted Waves

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya

geofizicheskaya, 1960, No. 6, pp. 854 - 862

+ 2 plates

TEXT: The problem of determining the profile of the refracting boundary from the individual transverse hodograph is considered for the case of a single flat inclined separation boundary. Formulae are given for determining the depths of the refracting boundary in the immersion zone from the individual transverse hodographs of refracted waves at each point of the profile. The errors in the determination of the effective depths of the refracting boundary in the immersion zone are considered. The accuracy of the determination of the profile of the refracting boundary in the immersion zone is formulated. Examples of experimental data are given. It is shown that Card 1/3

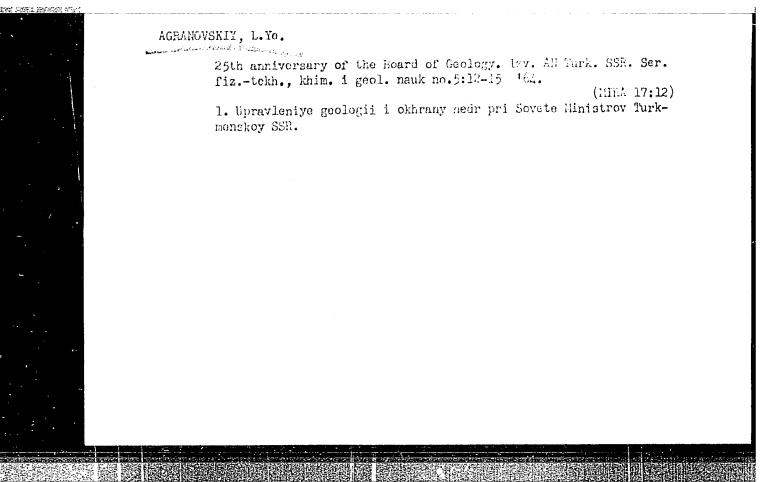
86205

S/049/60/000/006/005/005/XX E191/E381

Determination of the Depth and Profile of the Separation Boundary from the Individual Transverse Hodographs of Refracted Waves

only in the case of a straight line transverse profile orientated across the direction of the spread of the refracting boundary and on condition that the separation boundary along the perpendicular line is horizontal, does the individual transverse hodograph of the refracted wave at given values of the velocities in the top layer and the refracting layer offer the possibility of determining the depths at each point of the line of observation. Under actual conditions, these requirements are satisfied adequately in the exploration of structural elements of the type of an inclined monocline layer. In all other cases, additional data are required apart from the values of the velocities. When these data are known, the formulae given permit the plot of the boundary of separation, also in the case when the boundary velocity in the refracting layer varies along the

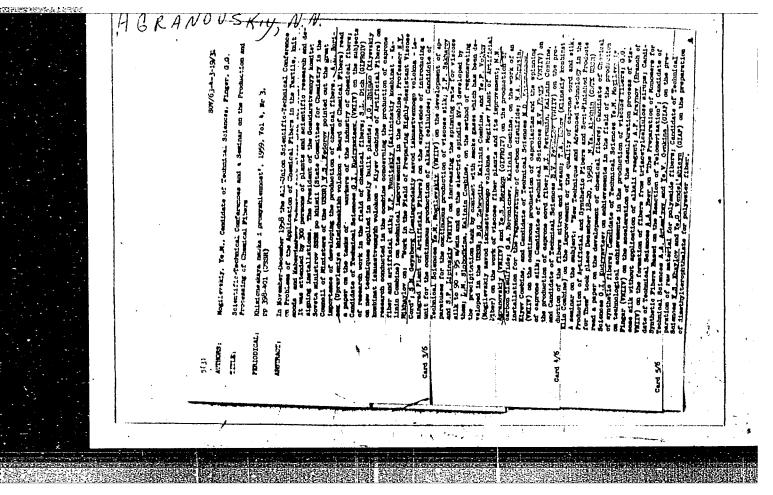
Card 2/3



# AGRANOVSKIY, I.N., GAYLEVSKIY, L.I. Electric conductivity of carbon-containing materials used in the production of carbon disulfide. Report No.1. Khim.volok. no.3138-41 '61. (MIRA 14:6) 1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta iskusstvennogo volokra. (Carbon disulfide) (Coal—Electric properties)

L\_33115-66 ACC NR: AP6024083 SOURCE CODE: UR/0144/66/000/002/0235/0236 Zav'yalov, A. S.; Get'man, A. A.; Molchanov, V. D.; Krasyuk, N. P.; Agranovskiy, K. Yu.; Borgor, A. Ya.; Greyer, L. K.; Yesakov, V. P.; Hiller, Ye. V.; Pyatman, K. I.; Abryutin, V. N.; Gubanov, V. V.; Oranskiy, M. I.; Yevseyev, H. Ye.; Merkin, G. B.; Sinel'nikov, Ye. M.; Avilov-Karnaukhov, B. N.; Bogush, A. G.; Bolyayov, I. P.; Pokkor, I. I.; Chernyavskiy, F. I. ORG: none B TITIE: 0. B. Bron (on his 70th birthday) SOURCE: IVUZ. Elektromokhanika, no. 2, 1966, 235-236 TOPIC TAGS: electric engineering personnel, circuit breaker ABSTRACT: Osip Borisovich Bron was born in 1896 in Klintsi. In 1920, he graduated from the physics-math faculty of Khar'kov Technological Institute. He became a professor in 1930. He defended his doctor's thesis in 1940. During the second world war, he was in the navy. After demobilization in 1950, Engineer Colonel Bron went to work toaching at the Leningrad Industrial Correspondence School. He became the head of the Chair of Theoretical Bases of Electrical Technology in 1958. He is closely associated with scientific and development work, and has cooperated closely in this area with the Leningrad "Elektrosila" plant since 1946. His work has been in the areas of spark-damping and high-power circuit breakers. He has published over 140 scientific works and 19 inventions. [JPRS] SUB CODE: 05, 09 / SUBM DATE: none Card 1/1

LYZHNYY SPORT. DOPUSHCHENO V KACHESTVA UCHEB. POSOBIYA DLYA TEKHNIKUMOV
FIZICHES-KOY KUL'TURY. MOSKVA, FIZ-KUL'TURA I SPORT, 1951.
312 p.

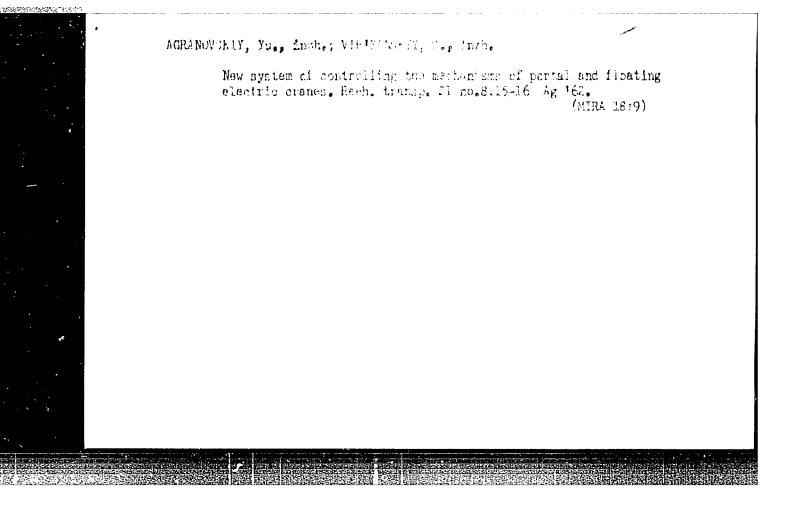


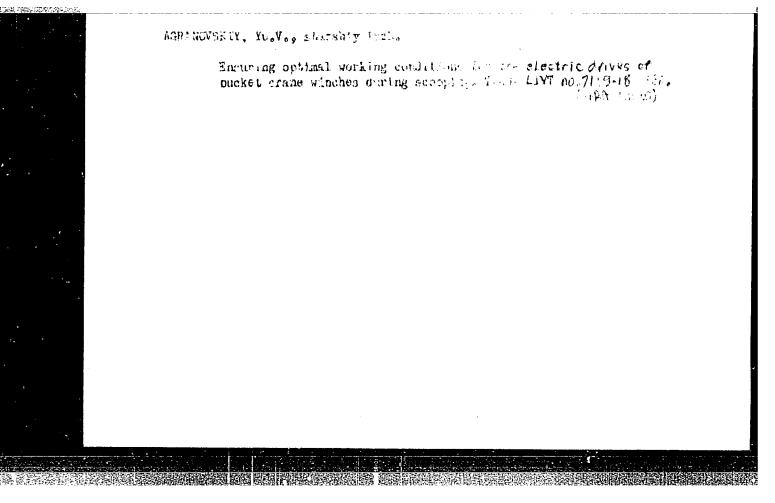
# AGRANOVSKIY, V.

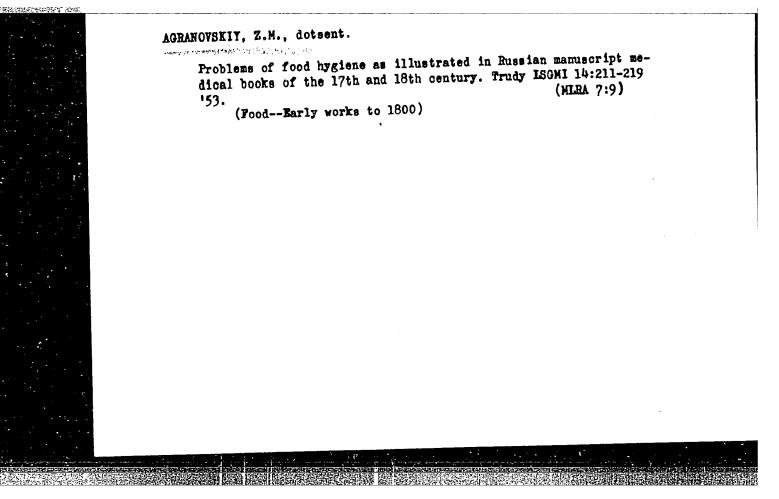
"Sakhiurt" means spark. IUn.tekh. 5 no.3:13-14 Mr '61.

(MIRA 14:6)

(Buryat Mongolia--Building stones)







USSR/Medicine - Nutrition

Card 1/1 Pub. 141 - 17/19

Author

: Agranovskiy, Z. M.; Gessen, A. I. (Reviewed by Bychkov, I. Ya.)

Title

: Guide for specialization of subordinates in nutritional hygiene

Periodical : Vop. pit., 47-48, Jul/Aug 1955

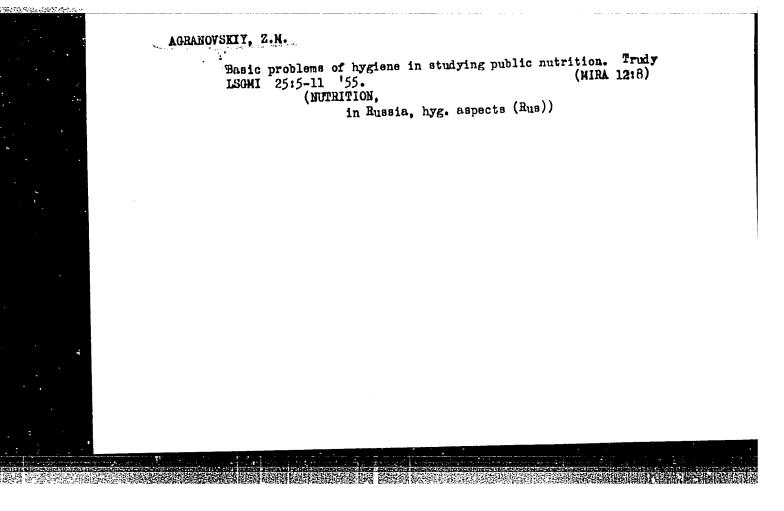
Abstract

: Gives favorable review of above guide for students about to become specialists in nutritional hygiene. The few errors found in the book are

due to faulty editing, according to the reviewer. No references.

Institution :

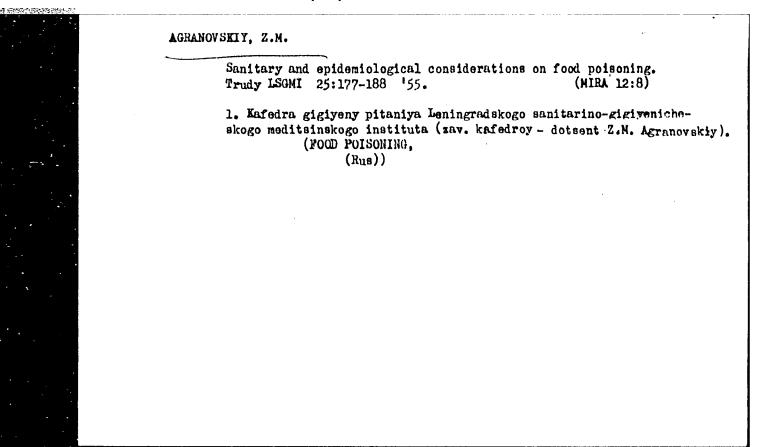
Submitted



# AGRANOVSKIY, Z.M.

Problems in the epidemiology and prevention of diphyllobothriasis in fishing areas. Trudy LSGMI 25:127-167 '55. (MIRA 12:8)

1. Kafedra gigiyeny pitaniya Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy dobsent Z.F. Agranovekiy). (TAPEWORM INFECTION, epidemiology, diphyllobothriasis in Russia, in fishermen (Rus))



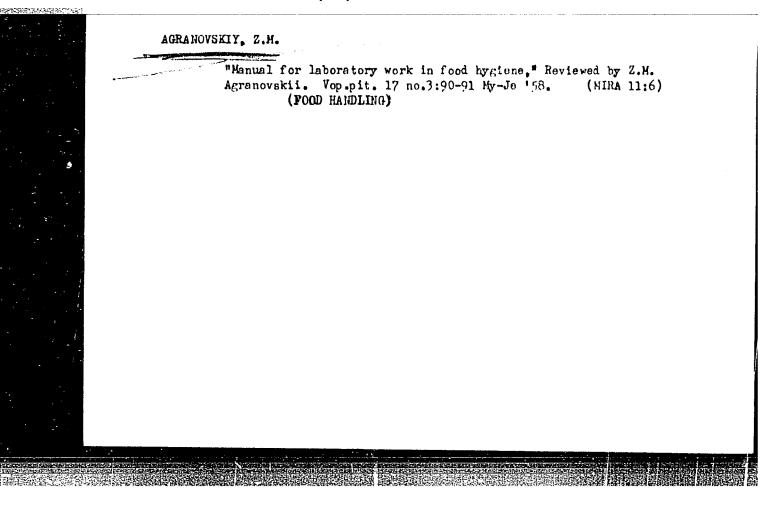
# AGRANOVSKIY, Z.M., dotsent

Method and practices in teaching a course in the hygiene of nutrition.

Trudy ISGMI 36:39-81 '56. (MIRA 14:1)

(NUTRITION\_STUDY AND TEACHING)

AGRANOVSKIY, Z. M.: Doc Med Sci (diss) -- 'Diphyllobothriasis as a problem in marginal pathology". Leningrad, 1958. 53 pp (Min Health RSFSR, Leningrad Sanitary-Hygiene Med Inst), 300 copies (KL, No 6, 1959, 140)



AGRANOVSKIY, Z.M.

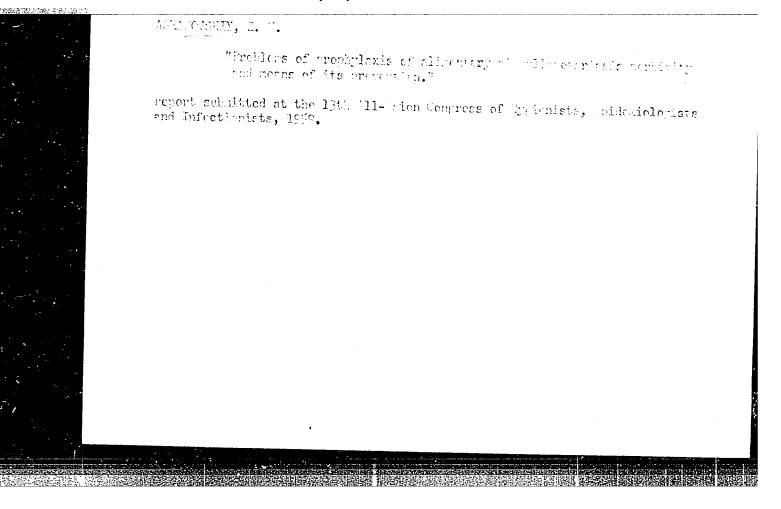
Problems of food hygiene in "Food regulations"; on the 200th anniversary of the first edition. Vop.pit. 17 no.6:64-67 N-D '58. (MIRA 12:2)

1. Iz kafedry gigiyeny pitaniya Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(RUSSIA--ARMY--COMMISSARIAT)

(FOOD)

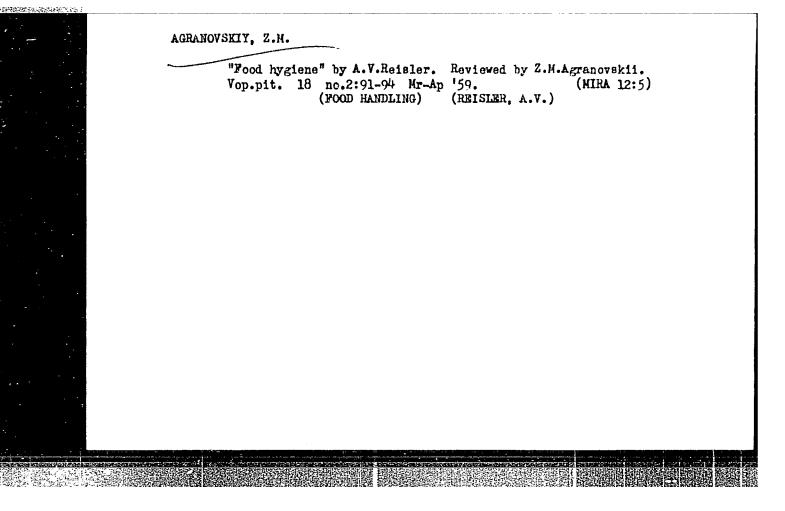
# Sanitary and helminthological examination of fish as a means of preventing diphyllobothriasis [with summary in English]. Trudy LSGMI 44:283-306 '58 (MIRA 11:12) 1. Zaveduyushchiy kafedroy gigiyeny pitaniya Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta. (TAPENORM INFECTION, prev. & control. exam. of fish prev. of diphyllobothriasis (Rus)) (FISH. exam in prev. of diphyllobothriasis (Rus)) fish exam. in prev. of diphyllobothriasis (Rus))



AGRANOVSKIY, Khaim-Zalman (Zinoviy) Mendelev (Markovich) for Doc Med Sci on the basis of dissertation defended 2 Feb 59 in the Council of Len Sanitary Hygienic Med Inst, entitled "Diphyllobothriosis as a problem of marginal pathology."

(BMViSSO USSR, 1-61, 20)

-69-



# AGRANOVSKIY, Z.M., dotsent Experimental investigation on the effect of various physicochemical factors on the survival of Diphyllobothrium latum pherocercoid and their significance for the prevention of alphyllobothriasis. Report No.1. Trudy LSGMI no.47:7-70 159. (MIRA 12:9) 1. Kafedra gigiveny pitaniya leningradskogo sanitarno-gigivenicheskogo meditsinskogo instituta (zav.kafedroy - dotsent Z.M.Agranovskiy). (DIPHYLLOBOTHRIUM) (FISH, parasitology)

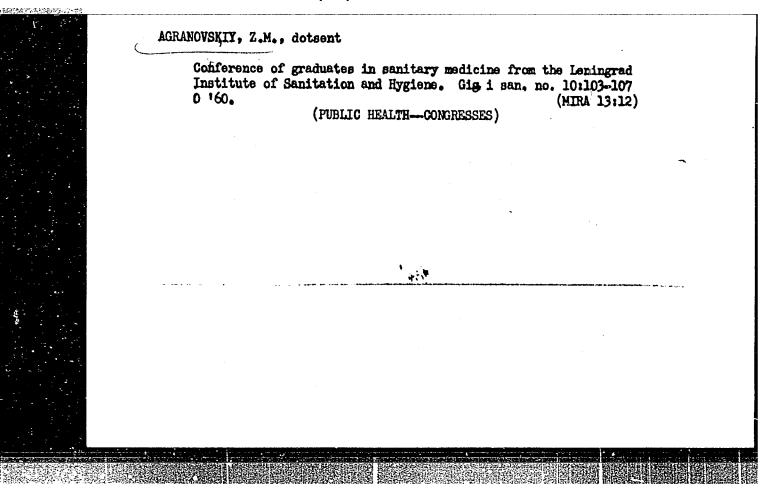
# ACRAHOVSKIY, Z.M., dotsent

Experimental investigation on the effect of various physicochemical factors on the survival of Diphyllobothrium latum plerocercoid and their significance for the prevention of diphyllobothriasis. Report No.2. Trudy LSGMI no.47:71-113 159. (MIRA 12:9)

1. Kafedra gigiyeny pitaniya Leningradskogo sanitarno-gigiyeniche-skogo meditsinskogo instituta (zav.kafedroy - dotsent Z.M.Agranov-skiy).

(DIPHYLLOBOTHRIUM) (FISH - parasitology)

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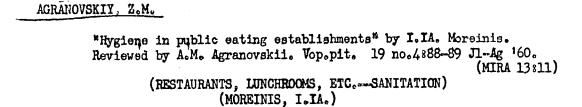


# AGRANOVSKIY, Z.M.

Clinic for alimentary diseases as an academic and scientific basis for a department of the hygienie of nutrition. Vop.pit.

19 no.1:81-86 Ja-F '60. (MIRA 13:5)

1. Iz kafedry gigiyeny pitaniya (zav. - dotsent Z.M. Agranovskiy) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta. (NUTRITION education)



AGRANOVSKIY, Z.M.

Some causes of erroneous diagnosis and unsatisfactory sanitary and epidemiological examination in food poisonings. Vop. pit. 20 no.5: 72-74 S-0 '61. (MIRA 14:10)

1. Iz kafedry pitaniya (zav. Z.M.Agranovskiy) i kliniki alimentarnykh zabolovaniy Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(FOOD POISONING)

IVANOV, A.Ya., prof., otv.red.; AGRANOVSKIY, Z.M., prof., red.;
ANDREYEVA-GALANINA, Ye.TS., prof., red.; ANICHKOV, S.V., prof.,
red.; BABAYANTS, R.A., prof., red.; BASHENIN, V.A., prof., red.;
GUTKIN, A.Ya., prof., red.; KAMYSHANOV, A.F., dotsent, red.;
KLIONSKIY, Ye.Ye., prof., red.; RYSS, S.M., prof., red.;
SMIRNOV, A.V., prof., zasluzhennyy deyatel nauki, red.;
TIKHOMIROV, P.Ye., prof., red.; CHISTOVICH, G.N., prof., red.

[New informative material on the methodology for sanitation of the environment, and the prevention, diagnosis and treatment of some diseases; results of research at the Leningrad Medical Institute of Sanitation and Hygiene to assist in the practice of public health] Novye informatsionnye material po metodike ozdorovleniia vneshnei sredy, preduprezhdeniiu, diagnostike i lecheniiu nekotorykh zabolevanii; rezul'taty nauchnykh issledovanii ISGMI v pomoshch' praktike zdravookhraneniia. Leningrad, 1961. 105 p. (Leningrad. Sanitarno-gigienicheskii meditsinskii institut. Trudy, vol.73).

1. Deystvitel'nyy chlen AMN SSSR (for Anichkov). 2. Chleny-korrespondenty AMN SSSR (for Babayants, Ryss).

AGRANOVSKIY, Z. M., prof.; LEBEDEVA, Ye. A.; MAYKOVA, O. P.; KHARAKHORKINA, K. D.

Nutrition in old age as a hygienic problem and methods for its combined study. Trudy LSCMI 67:8-17 '62. (MIRA 15:7)

1. Kafedra gigiyeny pitaniya s klimikoy alimentarnykh zabolevaniy Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. Z. M. Agranovskiy).

(NUTRITION) (GERIATRICS)

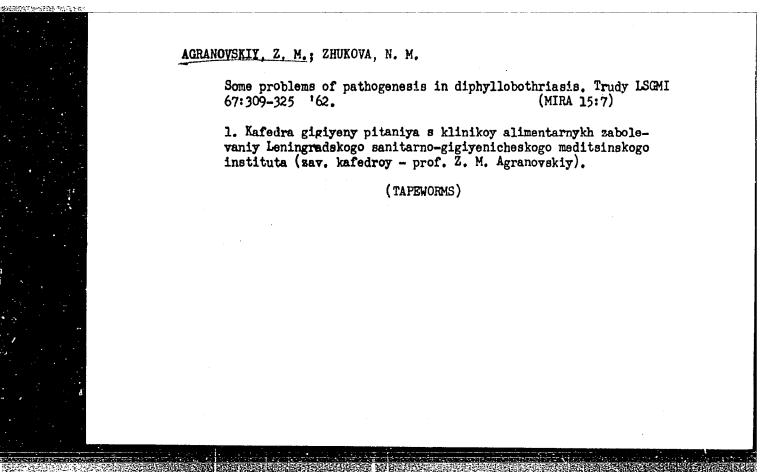
#### AGRANOVSKIY, Z. M.

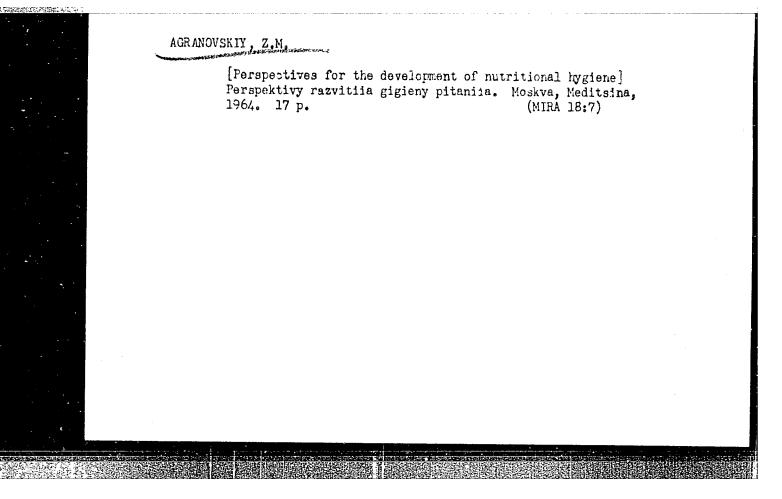
Distribution and characteristics of diphyllobothriasis morbidity in Leningrad. Trudy LSGMI 67:259-301 62.

(MIRA 15:7)

1. Kafedra gigiyeny pitaniya s klinikoy alimentarnykh zabolevaniy Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. Z. M. Agranovskiy).

(LENINGRAD REGION-TAPEWORMS)





SUBJECT:

USSR/Luminescence

48-5-50/56

AUTHORS:

Agranyan M.I. and Gorbachev N.V.

TITLE:

Manufacture of Luminescent Multiplication Paints and Their Application for Luminescent Filming (Izgotovleniye svetyashchikhsya mul'tiplikatsionnykh krasok i primeneniye ikh prilyuminestsentnykh kinos"yemkakh)

PERIODICAL:

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #5, pp 763-770 (USSR)

ABSTRACT:

Experimental research for the manufacture of luminescent paints was carried out and methods of their application in multiplication of movies were developed.

The basic raw material for the manufacture of luminescent paints are: zinc-sulfide and cadmium-sulfide luminophores produced by the "Krasnyy Khimik" plant, and lumogen produced by the Khar'kov Plant of Chemical Reagents.

As a result of experimentation, 24 paints were produced. They can well be photographed on the 3-layer color cinema-film. Ten of them are mixtures of luminophores and pigments, and

Card 1/3

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TITLE:

48-5-50/56

Manufacture of Luminescent Multiplication Paints and Their Application for Luminescent Filming (Izgotovleniye evetyashchikhaya mul'tiplikatsionnykh krasok i primeniye ikh pri ' lyuminestsentnykh kinos yemkakh)

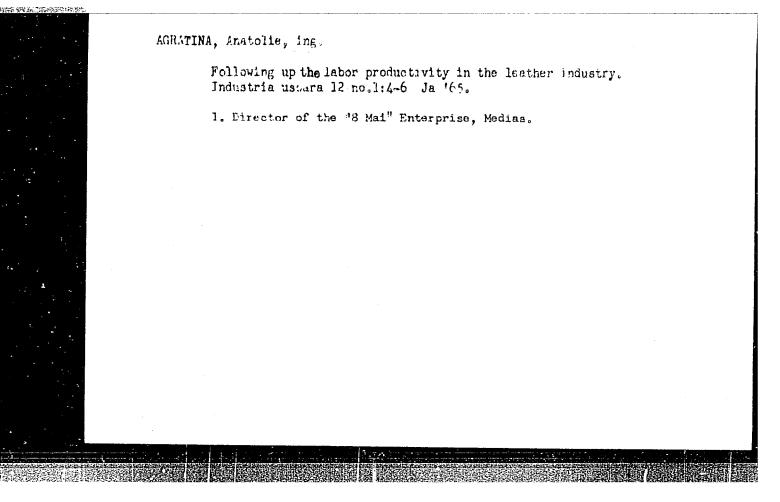
were devised to contain saturated colors for filming in mixed light. Ten others were produced without pigments, and were devised for filming under ultraviolet illumination alone. The two-year experience of using them has shown that these paints fully met the requirements of multiple filming. They possess a good adhesion to celluloid sheets, sufficiently elastic, and dry quickly. The composition and color characteristics of these paints are given in Table 1 of the paper.

A comparison of conventional and luminescent paints used for cinema films led to a conclusion that luminescent paints gave colors of greater purity than the conventional ones.

The luminescent paints were used in several movies produced by the studio "Soyuzmul'tfil'm" (Union Multiplication Film) during the time from 1954 to 1956.

Luminescent paints are of special importance for representing such light effects as polar light, fireworks, rainbows, thunderstorms, etc.

Card 2/3



AGRAYEV, V. A. (Gor'kiy)

"Concerning the Algorithm of Translation of French Texts by the Calculated Technique in Russian."

Theses - Conference on Machine Translations, 15-21 May 1958, Moscow.

AUTHOR: Agre, A. L.; Ivanov, V. M.; Trukhachev, V. T.  ORG: none  TITLE: Problem of the possibility of mineralizing water-face pressure cooking method [Paper presented at conference on promedicine held in Moscow from 24-27-May-1966].  SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1 kosmicheskoy meditsiny. (Problems of space medicine); materi Moscow, 1966, 13-14	966. Problemy
pressure cooking method [Paper presented at conference on pre- medicine held in Moscow from 24-27-May-1966].  SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1 kosmicheskoy meditsiny. (Problems of space medicine); materi	966. Problemy
kosmicheskoy meditsiny. (Problems of space medicine): materi	966. Problemy
1200019 13009 13414	aly konferentsii,
TOPIC TAGS: life support system, biologic metabolism, metabo	lic waste
ABSTRACT:	$\boldsymbol{\mathcal{V}}$
Experiments have demonstrated that it is possible to mind 0—93% of a urine-fecal mixture by a pressure cooking (wet dethod with air as the oxidizing agent.	ralize ombustion)
Tetilou with an as the oxidizing agent.	

0

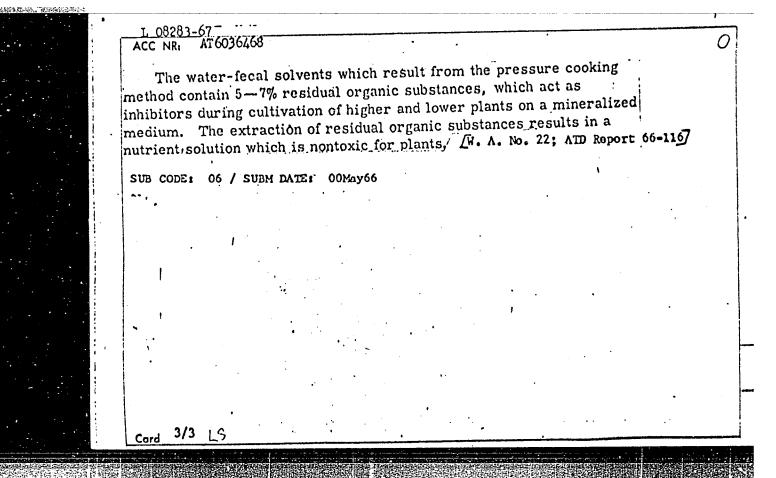
L 08283-67 ACC NR. AT6036468

The effects of various factors (temperature, pressure, and duration) were carefully studied under laboratory conditions. The relationships between feces and water, the required amount of the oxidizing agent (oxygen of the air) and the degree of mineralization were carefully observed. The degree of mineralization was determined on the basis of the difference between the initial chemical oxygen requirement and its terminal value expressed in terms of percentage. The chemical requirement of oxygen was determined by a bichromatic method.

In the course of the experiments it was determined that the optimum duration of cooking was 2 hr, with a temperature of 275°C, and pressure between 120 and 130 atm. This process, which develops a slight excess of air-oxygen in comparison with the initial chemical-oxygen requirement, results in mineralization of 90-93% of the fecal mixture.

The liquid which forms after mineralization is a transparent solvent with a specific aroma and a small amount of flaky sediment, which consists largely of non-water-soluble calcium and magnesium salts. The gas which forms during mineralization of the water-fecal mixture consists chiefly of carbon dioxide and residual oxygen and nitrogen.

Card 2/3



Distribution of radioactive pollutions in stagnant water. Med. rad. 5 no.1:67-73 Ja '60. (MIRA 15:3)

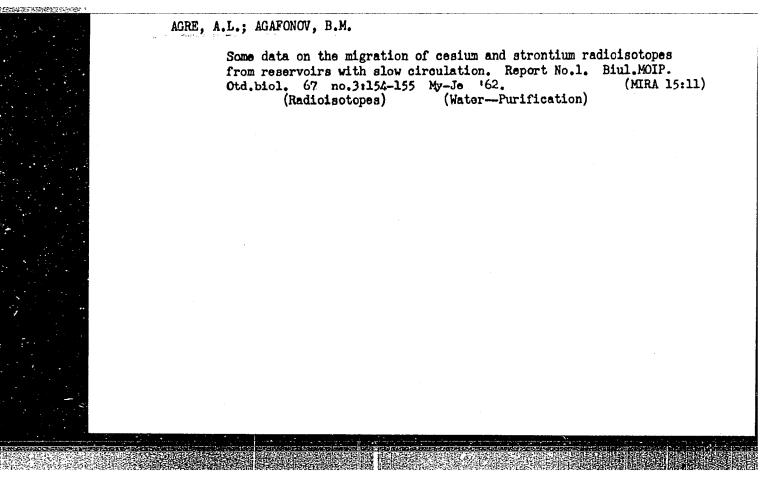
1. Iz kafedry biofiziki biologo-pochvennogo fakuliteta Moskovskogo gosudarstvennogo universiteta. (WATER POLLUTION) (RADIOACTIVE SUBSTANCES)

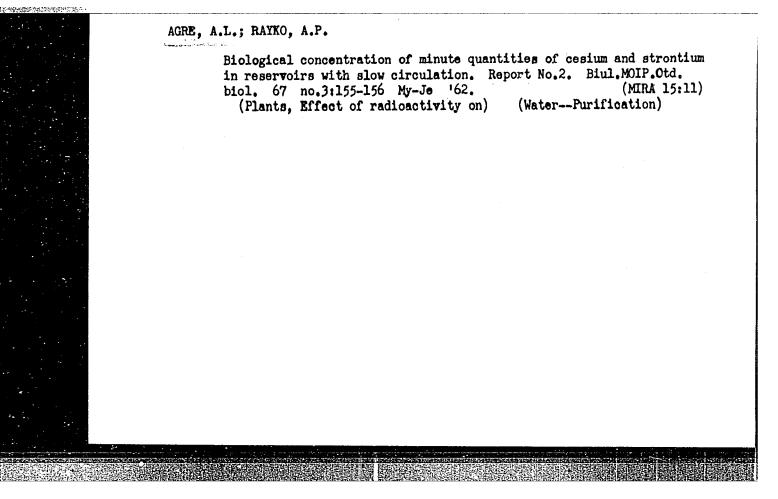
KOL'S, Ol'ga Romanovna; LIMARENKO, Iya Mikhaylovna. Prinimal uchastiye ACRE, A.L.; TARUSOV, B.N., prof., red.; CHERKASOVA, V.I., red. 1zd-va; YEZHOVA, L.L., tekhn. red.

[Practical work in general biophysics in eight issues]Praktikum po obshchei biofizike v vos'mi vypuskakh. Pod obshchei red.
B.N.Tarusova. Moskva, Gos. izd-vo "Vysshaia shkola." No.6. [Work with radioactive isotopes]Rabota s radioaktivnymi izotopemi.
1962. 202 p.

(Radiobiology)

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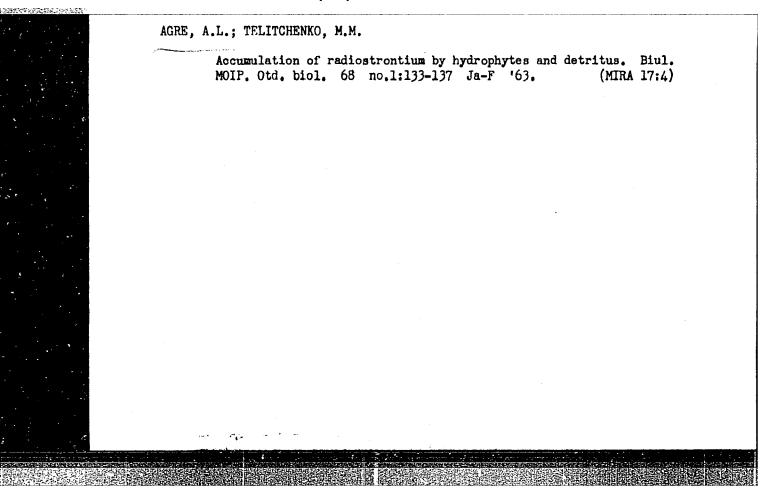


AGRE, A.L.; RAYKO, A.P.; TIMOFEYEV\_RESOVSKIY, N.V.

Effect of the various biomass of aquatic plants on the concentration of microquantities of cesium and strontium in tanks with slow circulation. Biul.MDIP.Otd.biol. 67 no.5:120-127 S-0 '62.

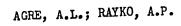
(MIRA 15:10)

(FRESHWATER FLORA) (WATER--PURIFICATION)
(PADIOISOTOPES)



AGRE, A.L.; MOICHANOVA, I. V.; TIMOFEYEV-BESOVSKIY, N.V.

Self-purification of water from cesium-137 in bodies of water with slow circulation at different speeds and volume of water and cesium concentration. Biul. HOIF. Old. biol. 69 no. 3: 20-24 My-Je '64. (MIRA 17:7)



Accumulation of microquantities of strontium by green and blue-green algae. Fiziol. rast. 11 no.1:135-137 Ja-F '64. (MIRA 17:2)

1. Akademiya kommunal'nogo khozyaystva imeni K.D. Pamfilova, Moskva.

59577-65

ACCESSION NR: AP5015738

UR/0205/65/005/003/0457/0458 577.7: 577.391

AUTHOR: Timofeyeva, N. A.; Agre, A. L.

TITLE: Coefficients of accumulation of strontium-90 by fresh-water plants from solutions differing in specific activity

SOURCE: Radiobiologiya, v. 5, no. 3, 1965, 457-458

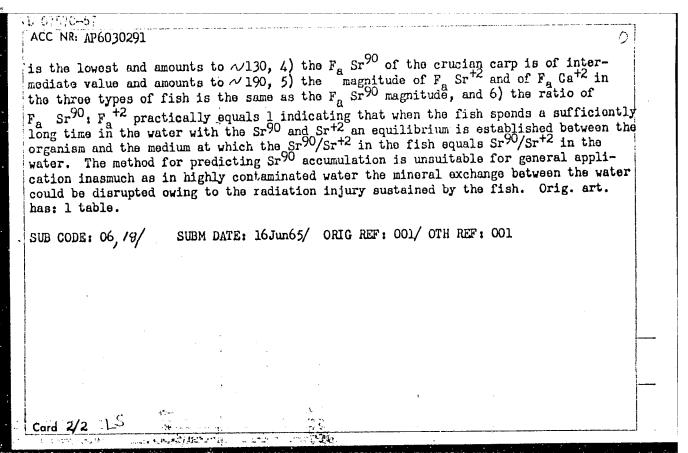
TOPIC TAGS: strontium 90, radiobiology, hydrobiology, algae, radioisotope, radioactivity

ABSTRACT: The authors present the results of experiments on the relationship between the coefficient of accumulation of Sr<sup>90</sup> by the fresh-water plants *Elodea* considers Rich, and *Cladophora fracta* Kutz and the specific activity of microconcentrations of the radioisotope. (The coefficient of accumulation is the ratio of the concentration of an element in some substance to its concentration in water.) Two series of experiments were performed: (1) 4 modifications with *Elodea* (with Sr<sup>90</sup> concentrations of 10<sup>-5</sup>, 10<sup>-6</sup>, 10<sup>-7</sup>, and 10<sup>-8</sup> c/liter) repeated 6 times; (2) 2 modifications with *Cladophora* (with Sr<sup>90</sup> concentrations of 10<sup>-5</sup> and 10<sup>-8</sup> c/liter) repeated 4 times. Since the Sr<sup>90</sup> concentration was found to increase in both

Card 1/2

Elodea and 754 for Cladoph efficient of accumulation of was no indication of an "is	ora. Thus, no relationship	ntration in water, the co- h an average value of 540 for was noted between the co- ivity. That is to say, there centrations used. Orig. art.
has: I table.		(Institute of Biology, UFAN
ASSOTIATION: Institut bio. 1878 SUBMITTER: 11/1153	parts	STE COME: US, NP
NO REF SOV: 007	OTHER COST	· · · · · · · · · · · · · · · · · · ·
Card 2/2		

L 07570-67 EWT(m) ACC NR: AP6030291 (A	
AUTHOR: Rovinskiy, F. Yo Biological Sciences)	a. (Candidate of Chemical Sciences); Agre, A. L. (Candidate of
ORG: Institute of Appli	ed Geophysics, Moscow (Institut prikladnoy geofiziki)
TITLE: Prediction of st	rontium 90 accumulation in fish
SOURCE: Gigiyena i sani	tariya, no. 8, 1966, 117-119
ABSTRACT: Under specifi in magnitude if the chem accumulation time of Sreequilibrium between the predict maximum accumulation.	isotope, radio strontium, radiation, radioactive fallout, redicative contamination, and state of the Sr and Sr 90 accumulation factors $F_a$ are equal nical state of the Sr and Sr 90 solutions is identical and the organism and the solution. In view of this it is possible to ations of Sr 90 in fish under various specific conditions by the of Sr under the same conditions. Experimental determinations and Ca in perch, crucian carp, and one-year-old carp show that so between the $F_a$ of Sr 90 and the type of fish, 2) the $F_a$ Sr 90 and amounts to $\sim 270$ , 3) the $F_a$ Sr 90 of the one-year-old carp
Card 1/2	UDC: 614:31:639.2]:614.777:546.42.02.90



ACC NR: AT6036467 SOURCE CODE: UR/0000/66/000/000/0012/0013

AUTHOR: Agre, A. L.; Nilovskaya, N. T.; Tsitovich, S. I. Bokovaya, M. M. Varlamov, V. F.; Chernovich, I. L.

26 811

ORG: none

TITLE: Experimental investigation of the possibility of cultivating higher plants on a nutrient medium of biological mineralizers under conditions of a closed gas cycle (Paper presented at conference on problems of space medicine held in Moscow from 24-27 May 1966)

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Poscow, 1966, 12-13

TOPIC TAGS: life support system, closed ecological system, plant physiology, photosynthesis, plant metabolism

ABSTRACT:

The creation of a closed cycle of substances for experimental ecological systems is unthinkable without a stage of recycling human metabolic wastes, in order to transform organic substances into elements for mineral feeding of lower and higher autotrophs.

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ACC, NR: AT 6036467

One of the possible and promising methods of mineralizing human metabolic wastes is to use aerobic oxidation of organic materials with the aid of biocenosis of microorganisms, carried out in a biological mineralization chamber. At the present time, the aeration tank (aerotank) as a biological mineralization chamber is highly developed from the point of view of both engineering and construction and is quite useful for conducting experiments with short closed cycles.

In these experiments (the very first), two linked but contradictory processes were utilized. The first process was the synthesis of organic compounds from inorganic ones using the energy of light (photosynthesis of higher plants). The second process was the biochemical oxidation of organic substances (mineralization of the urine and fecal mixture in the aeration chamber).

Higher plants (head cabbage) were grown for a period of twelve days in an open assimilation chamber on a urine-fecal liquid which had been mineralized biologically. After this, they were grown under conditions of a closed exchange of a gas-air mixture between the assimilation chamber and the aeration tank for periods of four and eleven days.

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During the process of biological mineralization, a certain amount of CO<sub>2</sub> gas was extracted from the aeration tank and allowed to pass into the assimilation chamber with the higher plants. In turn, oxygen which had been produced by the plants passed into the aeration tank. These experiments with the "assimilation chamber-aeration tank" system made it possible to establish a practical gas exchange between higher plants and the biocenosis of mineralizing microorganisms. The experiments also established the possibility of using a mineralized urine-fecal liquid as a nutrient medium for higher plants. In the course of these experiments a somewhat lowered photosynthetic rate was observed. It is assumed that this can be explained by the action of some kind of gaseous micro-admixtures which are metabolites of plants and of activated sludge.

Experimentation with short closed cycles of the "assimilation chamber-aeration tank" type showed that they are practical for obtaining information necessary for the creation of closed ecological system.

[W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3 29/2

. \$ ACC NR: AT7011648

SOURCE CODE: DR/0000/66/000/000/0001/000/

AUTHOR: Yazdovskiy, V. I.; Tsitovich, S. I.; Agre, A. L.; Gusarov, B. G.; Sinyak, Yu. Yo.; Chizhov, S. V.

ORG: none

TITLE: Transformation of wastes in a closed ecological system

SOURCE: International Astronautical Congress. 17th, Hadrid, 1966. Doklady. no. 10. 1966. O transformatsii produktov zhiznedeyatel'nosti cheloveka i biokompleksa pri osushchestvlenii krugovorota veshchestv v malykk zamknutykh prostranstvakh, 1-7

TOPIC TAGS: life support system, metabolic waste; closed ecology system

ABSTRACT:

Successful operation of life-support systems based on partial recycling of substances depends on mineralization of human wastes and other life-support system byproducts, such as refuse from the space greenhouse, garbage, etc. Biological, physical and chemical methods of mineralization can be used alone or in com-Criteria for judging the efficiency of these bination. methods include the completeness of mineralization, the degree of change in chemical composition and aggre-Card 1/6

ACC NR: AT7011648

gate state of the products, the coefficient of return of substances to the cycle, the weight and dimensions of equipment, the expenditure of energy, and the toxicity of end products.

The high-temperature and catalytic oxidation methods are most suitable for mineralizing solid and dehydrated human waste and life-support system refuse. The high-temperature method is technologically simple, but requires a temperature of 700-800°C. However, it mineralizes nearly all wastes, producing ash and gaseous products (CO2, sulfur oxides, etc.). Within a range of combustion regimes the mineral composition of the ash is fairly constant, although its physical and chemical properties may change. One disadvantage of the high-temperature method is the possibility of forming free nitrogen, which must be bound (with additional energy expenditure). It should be noted that some type of high-temperature mineralization must be included in a life-support system because this step burns up the end-products of other forms of processing. This method can be successfully used in partially closed systems.

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The catalytic oxidation method of mineralization requires comparatively little energy and produces an acid solution useful for dissolving ash and treating nutrient media for autotrophs. Lower initial temperatures (200°C are required, and the ash formed by this mineralization process is more suitable for further processing. However, experimental conditions must be strictly controlled and long-acting, stable catalysts must be found. The catalytic oxidation method can be advantageously combined with the high-temperature method previously described. This combination can be used in partially closed systems, when the desired end-product is solutions of mineral salts.

The "pressure-cooking" method (oxidation of wastes in the liquid state) utilizes high pressure and high temperature and can be used to mineralize liquid human wastes, diluted urine-fecal mixtures and plant residue. This complicated method deserves more study because it produces a solution of mineral salts directly. Owing to the variety of organic substances subjected to mineralization, it is difficult to obtain a solution of constant composition. Experimental investigation of this self-sustaining exothermal process showed 90% minerali-

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